

What is claimed is:

1. A grid, adaptable for use with an electromagnetic energy emitting device, comprising:

at least one metal layer comprising:

top and bottom surfaces; and

a plurality of integrated, intersecting walls, each of which extending from said top to bottom surface and having a plurality of side surfaces, said side surfaces of said walls being arranged to define a plurality of openings extending entirely through said layer, at least one of said openings including at least one projection extending therein.

2. A grid as claimed in claim 1, wherein:

15 said intersecting walls form said openings in a periodic pattern in a first direction along said top surface and in a direction perpendicular to said first direction.

3. A grid as claimed in claim 2, wherein:

20 said projections are arranged such that a total amount of material of said walls intersected by a line propagating in a first direction for the length of one period along the grid is substantially the same for any period along the first direction.

4. A grid as claimed in claim 2, wherein:

said projections are arranged such that a total amount of material of said walls intersected by a line propagating in a first direction for a first distance including at least one period along the grid is substantially the same as another total amount of material of said walls intersected by another line propagating in a second direction substantially parallel to said first direction for a second distance substantially equal to said first distance.

said projections extend from intersecting locations at which certain of said walls intersect.

6. A grid as claimed in claim 5, wherein:

at certain of said intersecting locations, two of said projections extend in opposite directions into different ones of said openings.

7. A grid as claimed in claim 6, wherein

said two projections have substantially the same area.

8. A grid as claimed in claim 6, wherein:

said two projections have different areas.

9. A grid as claimed in claim 1, wherein:

at least one of said projections has two sides, each extending from a different one of said walls.

10. A grid as claimed in claim 9, wherein,

said two sides extend substantially perpendicular to each other.

11. A grid as claimed in claim 9, wherein:

said two sides extend at an angle other than 90° with respect to each other.

12. A grid as claimed in claim 1, wherein:

at least one of said projections has a side extending in a substantially straight direction between two of said walls.

13. A grid as claimed in claim 1, wherein:

at least one of said openings has a material disposed therein which is adapted to

suspended in said material which is adapted to substantially prohibit said electromagnetic energy from passing therethrough.

14. A grid as claimed in claim 1, wherein:

at least one of said walls has a thickness different from at least one other of said walls.

15. A grid as claimed in claim 1, wherein:

at least some of said walls intersect at an angle other than 90° with respect to each other.

16. A grid as claimed in claim 1, further comprising a plurality of said layers which are stacked on top of each other such that walls of the layers are substantially aligned so that the openings in the layers are substantially aligned to form openings which pass entirely through the grid.

17. A grid as claimed in 1, wherein:

each said projection is connected to at least one of said walls.

18. A grid as claimed in claim 1, wherein:

at least one said projection is separated from all of said walls.

19. A grid as claimed in 1, further comprising:

at least one second metal layer, comprising:

second top and bottom surfaces; and

a plurality of integrated, intersecting second walls, each of which extending from said second top to bottom surface and having a plurality of second side surfaces, said second side surfaces of said second walls being arranged to define a plurality of second openings extending entirely through said second layer; and

said first and second layers are stacked on top of each other such that said first and second walls of said first and second layers are substantially aligned so that said first and second openings in said first and second layers are substantially aligned to form openings which pass entirely through the grid.

20. A grid as claimed in claim 19, wherein:

said first layer includes a material different from a material included in said second layer.

10 21. A grid as claimed in claim 1, comprising:

a plurality of said layers, at least one of said layers including a material different from a material included in any other of said layers.

22. A grid as claimed in claim 1, wherein:

15 at least one said layer is attached to a substrate.

23. A grid as claimed in 1, wherein:

20 said walls extend between said top and bottom surfaces at respective angles to focus at a point which is at a distance from said top surface of said grid.

24. A grid as claimed in 1, wherein:

25 said walls extend between said top and bottom surfaces substantially parallel to each other.

25. A grid is claimed in 1, wherein:

a first group of said walls extending along said grid in a first direction parallel to said top and bottom surfaces are substantially parallel to each other; and

a second group of said walls extending along said grid in a second direction parallel to said top and bottom surfaces each extend between said top and bottom surfaces and are substantially parallel to each other.

line extending in a direction substantially parallel to said top surface at a distance from said top surface.

26. A grid as claimed in 1, wherein:

at least one said layer includes a plurality of sections, adapted to couple together to form said at least one said layer.

27. A method for minimizing scattering of electromagnetic energy in an electromagnetic imaging device that is adapted to obtain an image of an object on an imager, comprising:

placing a grid between an electromagnetic energy emitting source of the electromagnetic imaging device and said imager, said grid comprising at least one metal layer including top and bottom surfaces and a plurality of solid integrated, intersecting walls, each of which extending from said top to bottom surface and having a plurality of side surfaces, said side surfaces of the walls being arranged to define a plurality of openings extending entirely through said layer, at least one of said openings including at least one projection extending therein; and

moving said grid in a grid moving pattern while said electromagnetic energy emitting source is emitting energy toward said imager.

28. A method as claimed in claim 27, wherein:

at least one of said openings has a non-square shape at said top surface, and said walls form said openings in a periodic pattern extending along said top surface of said grid in a first direction and a second direction substantially perpendicular to said first direction; and

said moving step moves said grid in a direction of movement which is substantially parallel to said first direction, substantially perpendicular to said second direction, and transverse to respective directions in which said walls extend along said grid.

29. A method as claimed in claim 27, wherein said moving includes:
moving said grid along a substantially straight line at a substantially uniform speed.

30. A method as claimed in claim 27, wherein said moving includes:
moving said grid in a forward and reverse oscillatory motion along a substantially straight line, at a substantially uniform speed.

31. A method for minimizing scattering of electromagnetic energy in an electromagnetic imaging device that is adapted to obtain an image of an object on an imager, comprising:

placing a grid between an electromagnetic energy emitting source of the electromagnetic imaging device and said imager, said grid comprising at least one metal layer including top and bottom surfaces and a plurality of solid integrated, intersecting walls, each of which extending from said top to bottom surface and having a plurality of side surfaces, said side surfaces of the walls being arranged to define a plurality of openings extending entirely through said layer, at least one of said openings having a non-square shape at said top surface; and

moving said grid in a grid moving pattern while said electromagnetic energy emitting source is emitting energy toward said imager.

32. A method as claimed in claim 31, wherein:
said walls forms said openings in a periodic pattern extending along said top surface of said grid in a first direction and a second direction substantially perpendicular to said first direction.

33. A method as claimed in claim 32, wherein:
said moving step moves said grid in a direction of movement which is substantially parallel to said first direction, substantially perpendicular to said second

direction, and transverse to respective directions in which said walls extend along said grid.

34. A method as claimed in claim 31, wherein:
at least one of said openings including at least one projection extending therein.

35. A method as claimed in claim 31, wherein said moving includes:
moving said grid along a substantially straight line at a substantially uniform speed.

36. A method as claimed in claim 31, wherein said moving includes:
moving said grid in a forward and reverse oscillatory motion along a substantially straight line, at a substantially uniform speed.

15 37. A method for making a grid, comprising at least one layer having a plurality of intersecting walls defining openings therein, and being adaptable for use with electromagnetic energy emitting devices, the method comprising:
applying a resist coating onto a substrate structure;
covering at least a portion of the resist with a first mask having a plurality of apertures therein;
irradiating rays of energy onto the first mask, such that some of the rays of energy enter at least some of the apertures in the mask;
removing the portions of the resist after all required exposures that were irradiated by the rays of energy to create openings in a remaining portion of the resist, and
introducing material into the openings in the remaining portion of the resist such that the material forms the intersecting walls of the at least one layer of the grid, with at least one projection extending into at least one of said openings in the grid.

20 38. A method as claimed in claim 37, further comprising:

after performing said covering and irradiating steps and prior to performing said removing step, performing the following:

covering another portion of the resist with a second mask having a plurality of apertures therein; and

irradiating rays of energy onto the second mask, such that some of the rays of energy enter at least some of the apertures in second mask.

39. A method as claimed in claim 37, wherein the rays of energy include X-rays, and the resist includes an X-ray resist.

40. A method as claimed in claim 37, wherein the rays of energy include UV rays, and the resist includes a UV resist.

41. A method as claimed in claim 37, wherein said introducing step comprises electroplating the material into the openings in the resist.

42. A method as claimed in claim 37, further comprising: removing the remaining portion of the resist.

43. A grid, adaptable for use with an electromagnetic energy emitting device, comprising:

at least one metal layer comprising:

top and bottom surfaces; and

a plurality of periodic, solid integrated, intersecting walls, each of which extending from said top to bottom surface and having a plurality of side surfaces, said side surfaces of the walls being arranged to define a plurality of openings extending entirely through the layer, at least one of said openings being non-square shaped, and said intersecting walls forming said openings in a periodic pattern in a first direction along said top surface and in a direction perpendicular to said first direction.

44. A grid as claimed in claim 43, wherein:
said layer includes a plurality of sections, adapted to couple together to form
said layer.

45. A grid as claimed in claim 43, wherein:
said layer includes at least one projection extending into at least one of said
openings.